How central banks are inadvertently creating the next crisis.

A Bank of Japan (BOJ) Case Study

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1. Introduction

"This debilitating spiral has spurred our government to take massive action. In poker terms, the Treasury and the Fed have gone "all in." Economic medicine that was previously meted out by the cupful has recently been dispensed by the barrel. These once-unthinkable dosages will almost certainly bring on unwelcome after effects. Their precise nature is anyone's guess…" (Warren Buffet, 2008).

Conventional monetary policies are no longer as efficient as they should be. The 2008 US housing bubble is a perfect example of this. The collapse of the US housing bubble in 2008 culminated in the start of the financial crisis and the worst global recession since the Great Depression of the 1930's (Joyce, Miles, Scott & Vanyanos, 2012). In response, central banks like the Federal Reserve and the Bank of England intervened by implementing expansionary monetary policy which was aimed at providing financial institutions with access to "cheap" liquidity in an attempt to stimulate credit extension, which would translate into higher growth through increased consumption and spending. In doing so, central banks lowered their respective short-term nominal interest rates until they approached close or near to the zero bound. However, under constrained economic conditions and high levels of uncertainty, conventional monetary policy failed to stimulate aggregate expenditure and combat failing financial sectors in developed economies.

From this, we can already see that central banks not only play a role post-crisis, but have an even bigger involvement pre-crisis. The aim of this essay explores whether these unconventional monetary policies have created a platform for the next financial crisis. This essay uses the Bank of Japan (BOJ) as an example to identify some of the possible spill-over effect of unconventional monetary policy within the Japanese economy. In addition and for a robust analysis, the Federal Reserve Bank of the United States (Fed), the Bank of England (BOE) and the European Central Bank (ECB) were also examined.

The remainder of this essay will be structured as follows: Section 2 explains the unconventional monetary policies adopted by the Fed, the BOE, the ECB and the BOJ. The remainder of this essay then uses the BOJ as case study. Section 3 sheds light onto the BOJ's unconventional monetary policy and looks at the response by banks as well as the public. Section 4 gives an insightful look into Japan's 1990 "Bubble Economy" and common features that surround financial bubbles. Section 5 then explores whether these unconventional monetary policies have created a platform for the next financial crisis. Lastly, section 6 concludes and provides recommendations.

2. Unconventional Monetary Policies by Central Banks since the Great Financial Crisis

Much to everyone's disbelief, unconventional monetary policies were quickly adopted by reserve banks in many developed countries including the Fed, the BOE, the ECB and the BOJ. In an attempt to overcome the zero lower bound constraint and more importantly, weak aggregate expenditure resulting in expected deflationary pressures, central banks took action by moving away from conventional monetary policy to a more unconventional approach. The objective of unconventional monetary policy is to stimulate aggregate economic activity where conventional monetary policy is unable to at the zero-bound. Central banks have implemented a wide range of policy measure (shown in Table 1) and have actively engaged in credit policies, quasi-debt management and forward guidance (Borio and Zabai, 2016).

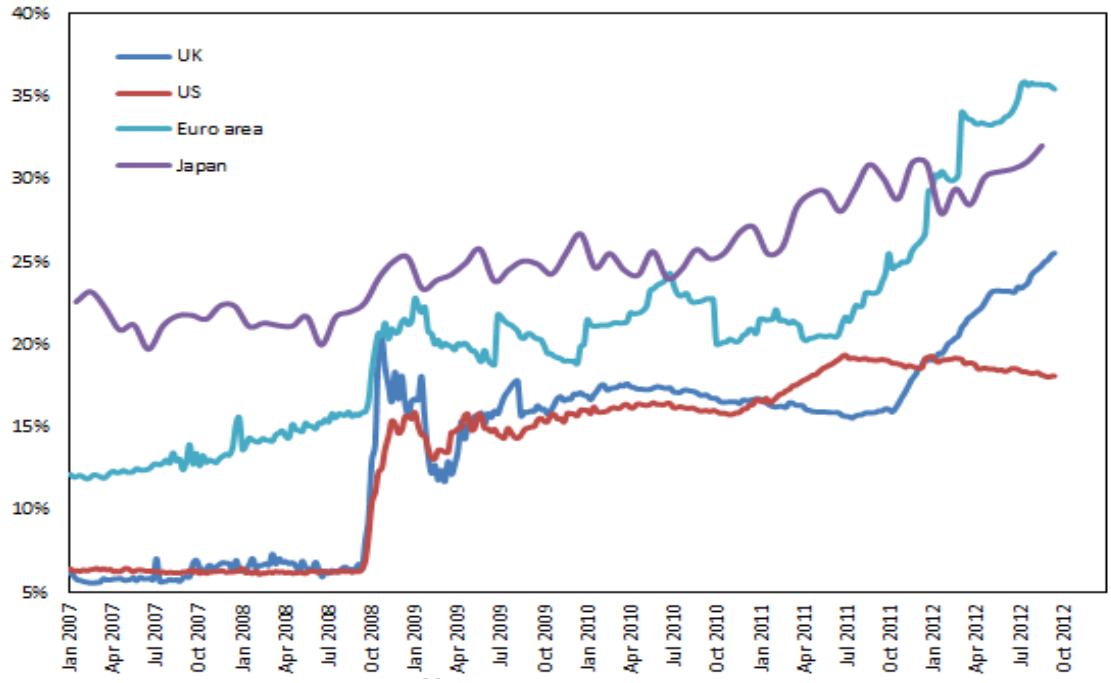
Table 1: Unconventional Monetary Policies adopted by the Fed, the BOE, the ECB and the BOJ

	Central banks			
Policy	Fed	BOE	ECB	BOJ
Balance sheet policies				
Credit policy	√	√	√	√
Quasi-debt management policy	√	√	√	√
Bank reserves policy				√
Forward guidance on interest rates				
Calendar-based, qualitative	√[1]			
Calendar-based, quantitative	√[2]		√[3]	
State-contingent, qualitative	√[4]	√[5]		√[6]
State-contingent, quantitative		√[7]		√[8]
Negative interest rates			√	√

Source: http://www.bis.org/publ/work570.pdf

At the end of 2008 the Fed introduced it's large scale asset purchase programs (LSAPPs) as it approached the zero lower bound constraint, in an attempt to improve the distressed financial market conditions, and by 2009 the BOE decided to follow in the Feds footsteps (Agostini., *et al* 2016). In early 2016 the BOJ rattled global markets by adopting negative interest rate, and only 18 months later the ECB decided to venture to below zero rates (Bloomberg, 2017). In addition, the Fed and the BOE have relied heavily on forward guidance policies which involve steering expectations about future balance sheet adjustments (Borio and Zabai, 2016). Unconventional measures introduced by central banks are not the same as they focus on different policy instruments; however one thing they all share in common is the goal to expand the size of their respective balance sheets.

Figure 1: Central Bank's Balance Sheets to GDP Ratio



Source: www.alsosprachanalyst.com

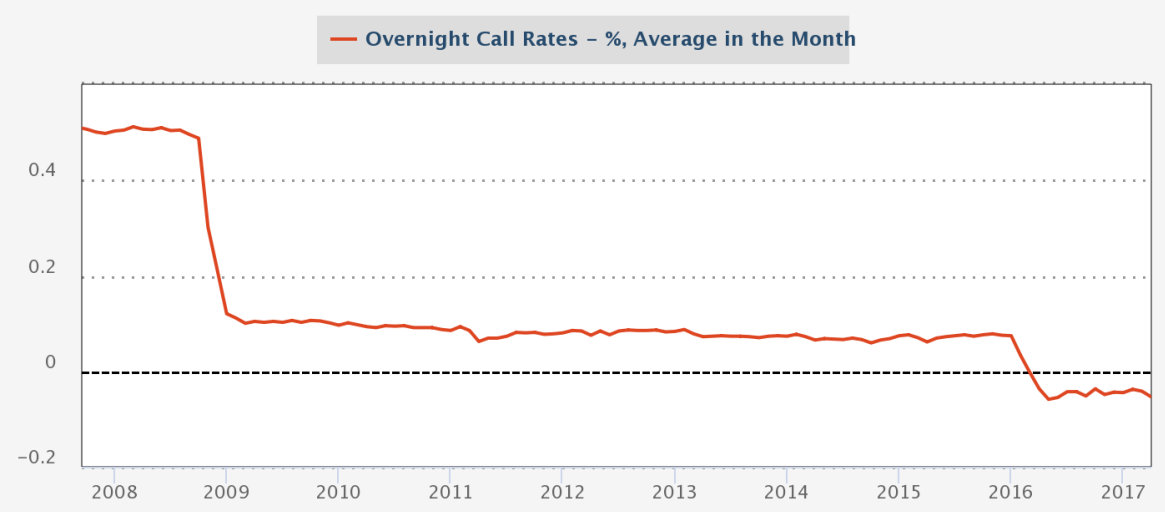
Ultimately, unconventional monetary policy will not have the same effects in different economies and measure that work well for some countries, may not work well for others. For example, evidence suggests that the ECB's NIRP has been effective in averting a severe credit crunch however the BOJ's NIRP has not yet been successful in combating strong deflationary pressures (Morgan, 2009). Furthermore, central banks implement a variety of unconventional policies in different dosages, some of which may involve more risk than others. In going forward, my essay will focus on the effects of the unconventional monetary policy specifically within the Japanese economy in an attempt to identify some of its possible consequences, and ultimately answer the question as to whether central banks are inadvertently creating the next financial crisis.

3.1. BOJ's Negative Interest Rate Policy and Quantitative Easing

In 2001 the BOJ first introduced the unusual monetary policy which involved purchases of debt instruments from the secondary market (better known as Quantitative Easing/QE) and in 2016, Governor Kuroda shocked the market even further by adopting a NIRP (Japan Macro Advisors- JMA). The BOJ's Quantitative Easing Policy (QEP) involves purchasing financial assets including exchange-traded funds (ETFs) and Japanese Government Bonds (JGBs) in an attempt to increase aggregate spending and prices within the economy. Japan's NIRP and QEP, which was expanded again in 2013 and 2014, have yet to bring about a sustained increase in inflation (JMA).

Post Global Financial Crisis (GFC), the goal of the BOJ has been to decrease the uncollateralized overnight call rate, which dropped to negative values during 2016 after the announcement of the NIRP. In a speech given by the BOJ's Governor Kuroda (2017), he explained that the bank will continue to deploy all its resources required in expanding the monetary policy until it has achieved the price stability target of 2 percent, and sustains it at that level in a stable manner. It is therefore not surprising that Japanese monetary authorities decided to leave interest rates unchanged at -0.1% in April 2017.

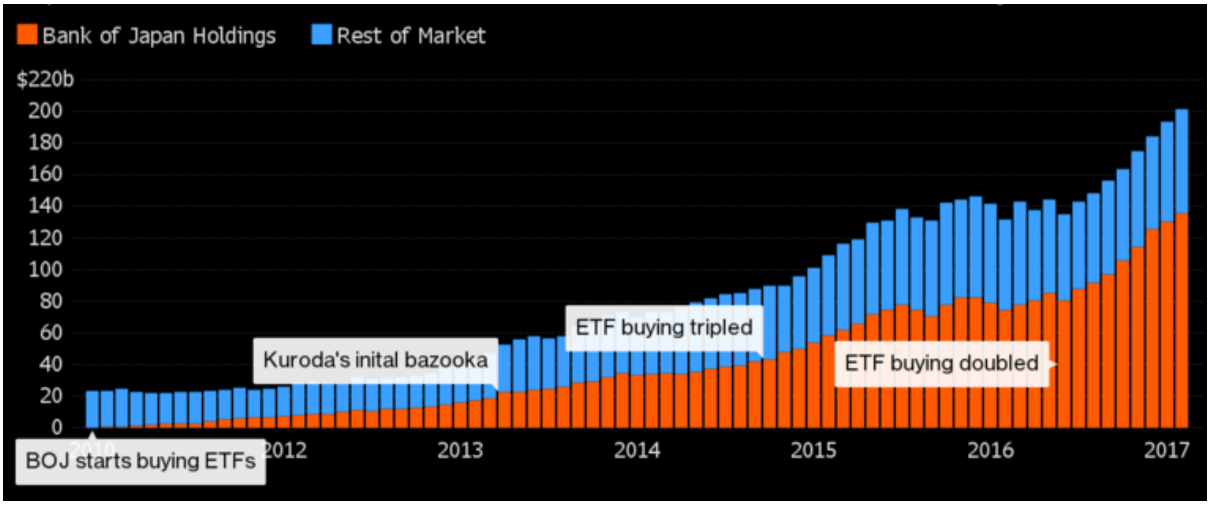
Figure 2: Japan Uncollateralized Overnight Call Rates (2006-2017)



Source: www.japanmacroadvisors.com

Since 2010, the BOJ has spent more than 13 trillion Yen ($119 billion) towards ETF purchases, with the BOJ owning about two-thirds of the nation's ETF market (Bloomberg, 2017).

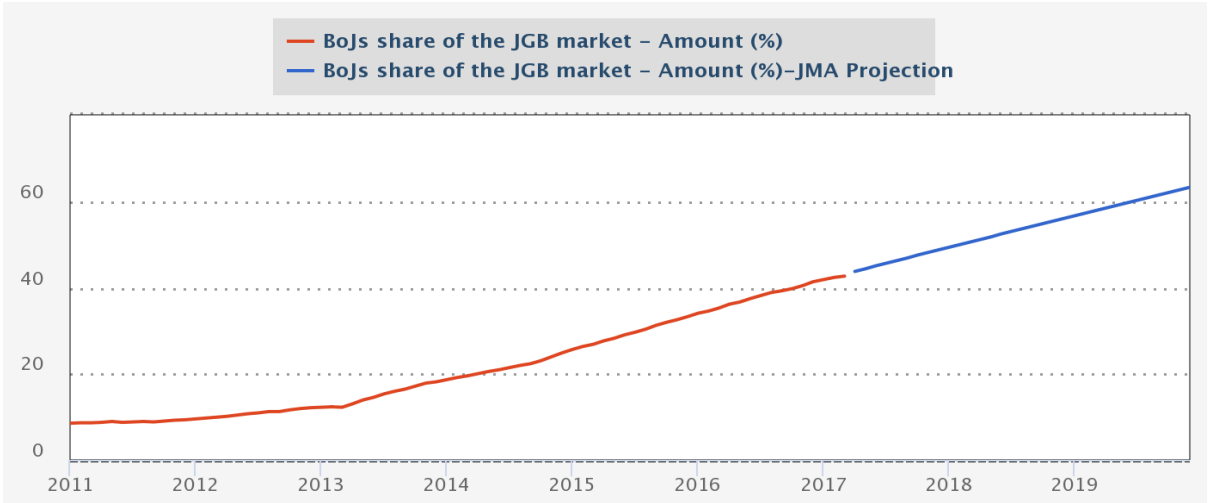
Figure 3: BOJ "the ETF Whale"



Source: www.mishtalk.com

According to JMA, the BOJ bought 8.6 trillion Yen of JGBs in March 2017 and owns 42.6% of the total JGB market. They project the BOJ's share of the JGB market to rise to a staggering 62.2% by November 2019. Furthermore, investors are concerned that the central bank is influencing the movement of not only the bond markets but equity markets as well (Franklin Templeton Investments, 2016).

Figure 4: BOJ's Predicted Share of JGB Market 2019



Source: www.japanmacroadvisors.com

The unconventional monetary policy which involves buying EFTs and JGBs has experienced much criticism, for instance, the BOJ is now considered to be the largest "whale" in the market, as it currently holds a massive share of the stocks listed on the Tokyo Stock Market and swallows a minimum of 1.2bn Yen worth of ETFs every single trading day (Business Insider, 2016; Financial Times, 2017). The BOJ is buying everything from government bonds to company stocks (Shedlock, 2016). Investors worry that it will become hard to trade in stocks because the BOJ's purchase

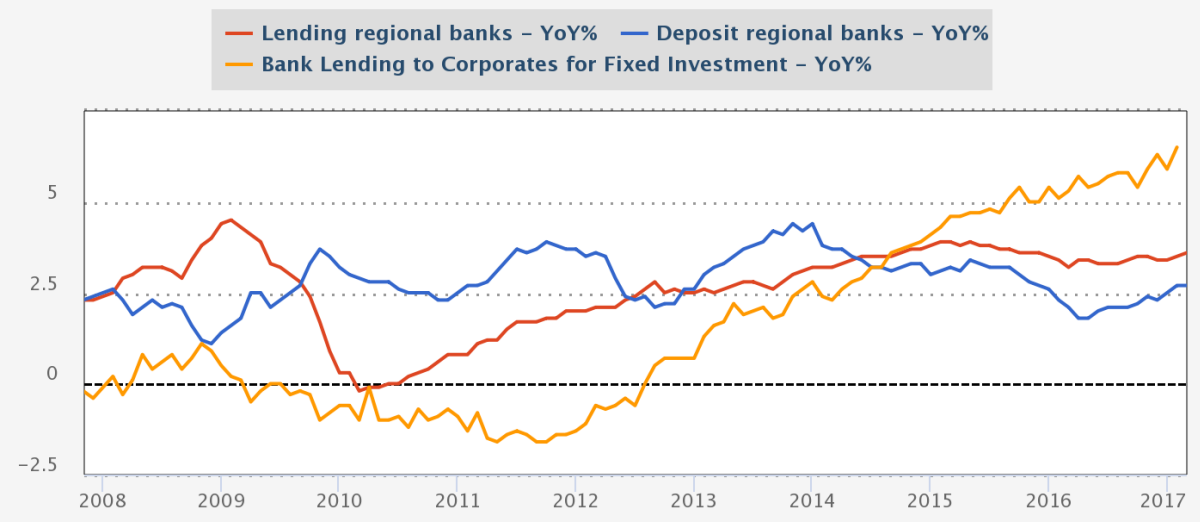
programme will eventually dry-up the free float of companies (Franklin Templeton Investments, 2016).

3.2. What is the Response by Banks in Japan to the QEP?

QE intends to surge the liquidity balances held by banks while putting downwards pressure on long-term interest rates. When banks experience an excess supply of liquidity, they can respond in two ways. Banks can lend out the excess reserves in the form of loans to encourage households and businesses to spend more, thus increasing aggregate output and restoring inflation back to its target rate. Alternatively, banks may be hesitant to lend out this money, therefore having no real impact on aggregate production and as a result making unconventional monetary policy ineffective. In the case of choosing not to lend out money, QE fails to encourage an increase in borrowing by the public therefore leaving prices and aggregate output unchanged. As can be seen, the role and decisions taken by banks as well as the public is critical in ensuring the success of an effective QEP.

Considering the crucial role that banks play in the success of the QEP, one has to consider the likelihood that banks have been overwhelmed by increased pressure to boost lending. If this is the case, one has to question whether financial institutions are lowering their credit standards in an attempt to offload their excess liquidity reserves. That is, are bank's lending recklessly in large volumes?

Figure 5: Rapid Growth in Bank Lending to Firms



Source: www.japanmacroadvisors.com

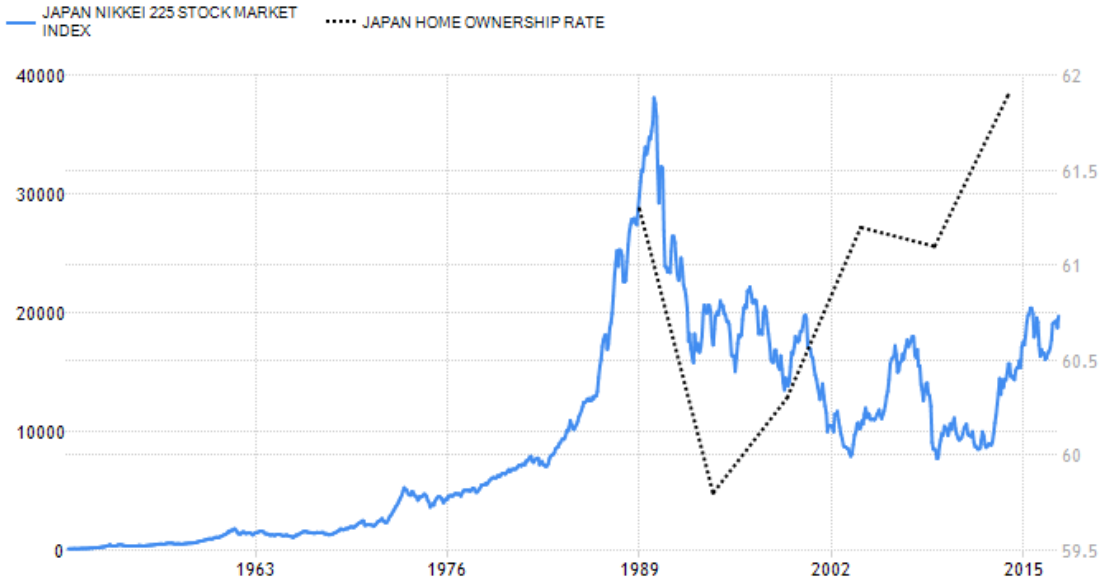
Investment growth in the housing sector is at its peak since 1977 as bank lending during 2016 reached a total of 12.28 trillion Yen ($109 billion) (Nikkei Asian Review, 2017). In preparation of the 2020 Tokyo Olympic Games, which is expecting to bring in an influx of foreign currency and tourism, locals have commenced major urban redevelopment projects (Nikkei Asian Review, 2017). Individuals too are now property investors- A 45-year-old construction worker who owns six rental properties, plans to buy another one in Tokyo this year for investment purposes, explaining that the ultralow interest rate makes it affordable "to buy now" (Nikkei Asian Review, 2017). Banks are operating as if they no longer have to worry about the risks associated with lending because they use property as collateral in the case of default. Whilst domestic housing prices rise, they become

over-inflated in comparison to housing prices elsewhere in the world. Some economists believe that this speculative activity within the real-estate market is evidence of a housing market bubble.

3.3. Flashback to Japan's "Bubble Economy" in 1990

Post-war years, the transformation of the Japanese economy was considered miraculous. In 1975 the Japanese economy was double the size of Britain's economy and only four years later Japan's GNP had reached roughly 40% of the size of the US economy (Saville, 2004). In the fast growing economy, low interest rates encourage Japanese companies to borrow enormously from financial institutions. The cheap credit channelled into inflation-hedged assets, such as properties and equities, lead to the prices of these assets being driven up so much that by 1991 property in Japan was equivalent to 20% of the world's wealth (Saville, 2004). Stock and real-estate prices soared to outsized heights while investment decisions were driven by speculative mania (The Bubble Bubble, 2012). The land underneath the Tokyo Imperial Palace was said to have been worth as much as the entire state of California in the same year (Impoco, 2008).The Nikkei peaked in December 1989 at 38 915 index points and soon after, the Nikkei stock bubble popped resulting in a 50% loss of its value by December 1994 (Saville, 2004).

Figure 6: Japan Ownership Rate and Nikkei Index (1989 - 2015)



Source: www.tradingeconomics.com

Since the crash of the 1990 Japanese Bubble, which led to a lost decade of economic growth, prices have continuously deflated and the economy has been left deteriorating. As Japan lost its competitive edge, many debt-ridden companies were kept alive through numerous government bailouts, leading to their nickname "Zombie companies" (Quartz, 2014). While the Nikkei Index continued to fall and prices of property assets drastically deflated, capital investment lost 60% of its value by the end of 1995, resulting in enormous losses to Japanese investors (Saville, 2004).

In the ensuing 20 years since 1990, the Japanese economy is still battling strong deflationary pressures which are so significant that near negative interest rates, repeated rounds of QE and

continuous weakening of the Yen have barely had an impact on inflation as yearned by monetary authorities (The Bubble Bubble, 2012).

4. Asset Bubbles

History is filled with numerous examples of asset bubbles and the deflationary effects on prices that come with the bursting of these bubble. Whilst its immediate consequences can be damaging, its spill-over effects have a far greater economic impact. The equity bubble crash, better known as the dot.com bubble in the US during the 1990's and early 2000's, involved extreme growth in the usage of the Internet and resulted in NASDAQ losing 86% in company stocks (Investopedia). Some investors believe that the collapse of the dot.com bubble steered US investors into the housing market, thereby inadvertently leading to the worst asset bubble collapse known to history called the Great Recession. Asset bubbles can take many forms, however according to Bernstein (2004) there are five characteristics that are common to financial bubbles:

1. Ample liquidity- Easy access to money that is used to make investments in assets which are regarded as profitable by investors, this in turn places upward pressure on prices and causes asset-price inflation.
2. Increased use of leverage- Asset bubbles are often accompanied by heightened attention and use of central bank's balance sheets.
3. Increased turnover- Financial bubbles are often characterised by increased productivity in the market and therefore firms tend to experience above average profits.
4. Democratisation of the market- Investor psychology has played a critical role in the formation of asset bubbles. Speculative activity within the asset market rises as investors believe that prices will remain high indefinitely.
5. New supply- Financial bubbles involve a new supply of assets. This could include houses or financial assets.

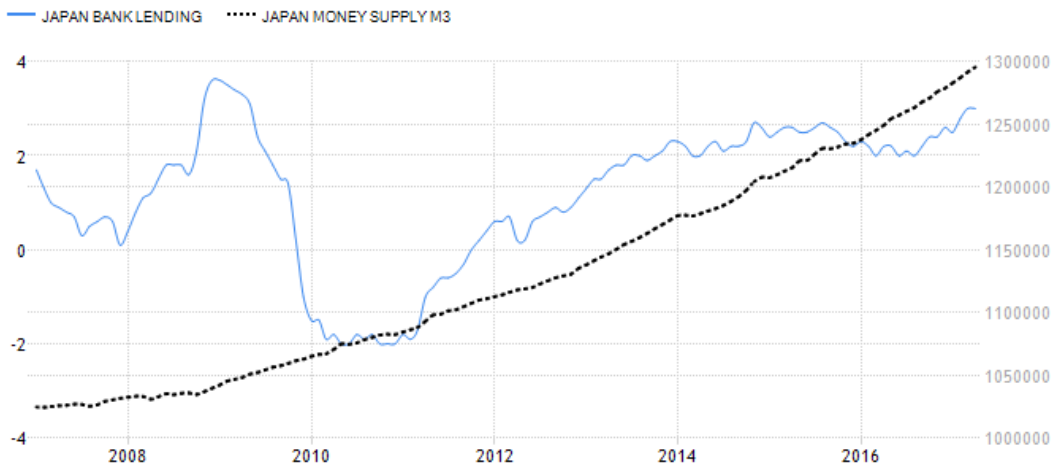
5. Asset Bubble Analysis within the Japanese Economy

Above it was noted that there are five common features that surround the formation of a financial bubble. These factors suggest that the both internal aspects which are controlled by the BOJ as well as exogenous factors that are beyond their control, fuel the development of asset bubbles. Evidence of the existence of these features within the Japanese economy is discussed below.

1. Ample Liquidity

Prior to the GFC, Japan's bank lending largely exceeded its money supply. After Lehman Brothers filed for bankruptcy in 2008, central banks around the world have implemented strict measures to ensure such an event will never happen again. As stated before, the role of banks to the success of an effective QEP is critical. From the figure below we can see that bank lending has been increasing but at a diminishing rate from around 2011 (and is above the existing money stock). This suggests that banks have indeed been lowering their credit standards in an attempt to get rid of their excess liquidity reserves. Notably however, from 2016 bank lending fell slightly and then eventually started increasing again. This variable (money supply) which is controlled entirely by the central banks, satisfies Bernstein (2004) assumption one.

Figure 7: Japan Money Supply and Bank Lending

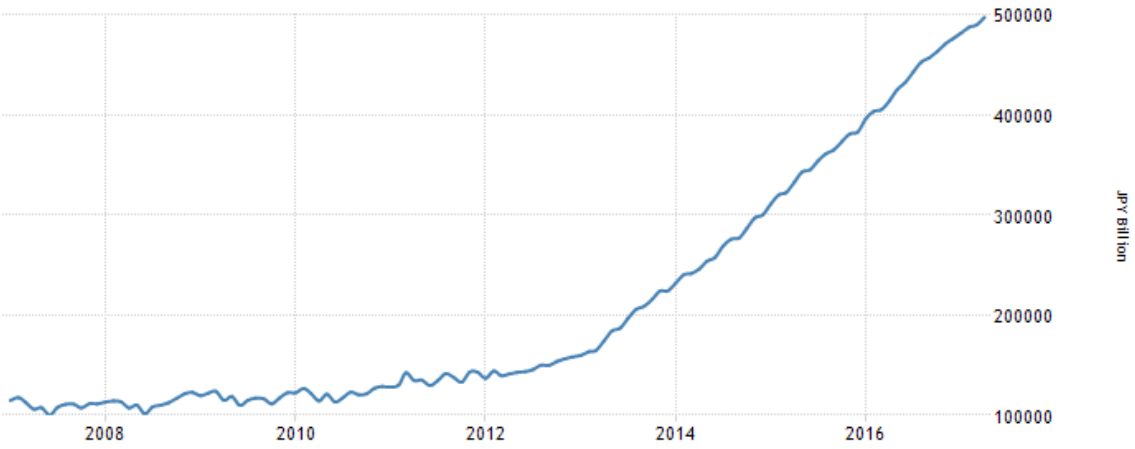


Source: www.tradingeconomics.com

2. *Increased Use of Leverage*

The graph below shows a major expansion in the BOJ's balance sheets as a result of unconventional QE and NIRP. According to an article in Financial Times (2017), it is highly likely that the BOJ will continue with policies that involve increasing its balance sheet in future despite growing concerns of long-term inflation risks and financial market distortions. This confirms the second feature that suggests that financial bubbles are accompanied by increased use of central bank's balance sheets. This condition is essentially determined by monetary authorities and is therefore under the control of the BOJ.

Figure 8: BOJ's Balance Sheet

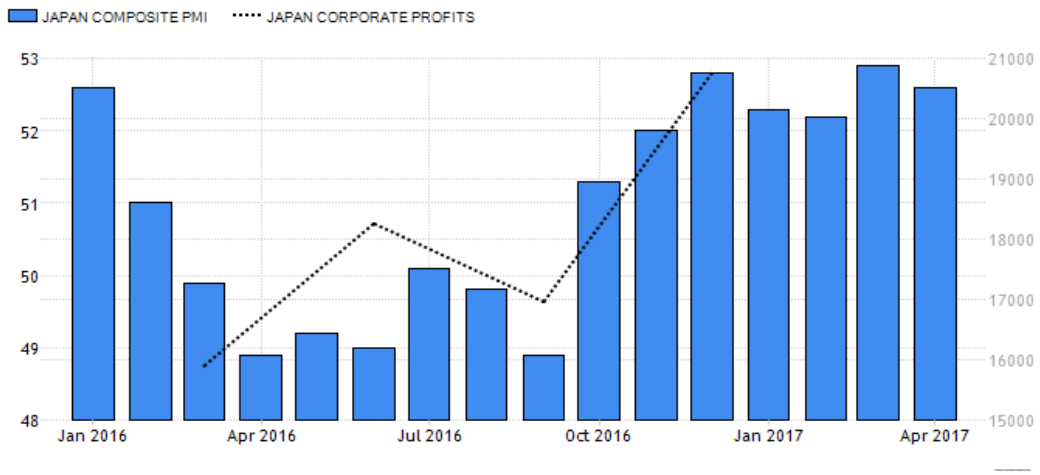


Source: www.tradingeconomics.com

3. Increased Turnover

Due to the fact that the number of historical observations of Japanese company profits was limited, I have chosen to also observe Japan's Composite PMI Index which tracks business trends across private sector activity, and includes variables such as sales, employment, inventory and prices (Trading Economics). A reading above 50 indicates that business activity is expanding and below 50 that business activity is declining. By examining the graph below, it is clear that the PMI Index is above 50 indices and has been since October 2016; thus implying evidence of stable growth within the Japanese business sector. Although, our analysis of company profits is constrained, it nevertheless provides an insightful look into Japanese corporate returns. Interestingly, its increase from March to June in 2016 was followed by a slight decrease over the next three months, however, since then it has increased rapidly. According to SAMS (2016) sales of all industries have experienced a -1.5% decrease from July to September 2016, however they are expected to grow steadily in the upcoming months. This evidence confirms the third feature which suggests that financial bubbles are accompanied by improved economic activity which is, to some extent, beyond the BOJ's control.

Figure 9: Japan Composite PMI and Corporate Profits



Source: www.tradingeconomics.com

4. Democratisation of the Market

Exogenous expectations based on external factors including market sentiment is difficult to display visually, however I attempt to do so by examining the movements in Japan's Watchers Index. The Economic Watchers Survey is a survey of people who are working in industries that are sensitive to economic trends and future market conditions (JMA). A reading above 50 indicates optimism and below 50 indicates pessimism. According to the graph below, the Economy Watchers Index is volatile but has generally been within the range of 40-60 index points, which implies that one cannot be confident in saying that it reflects market confidences or distrust. As a result, we are unable to say with absolute assurance if market democracy exists, however we are able to conclude that the current economic condition within Japan's economic environment is not extremely optimistic or extremely pessimistic. This feature is determined exogenously by future market expectations and is therefore beyond the BOJ's control.

Figure 10: Japan Economy Watchers Survey

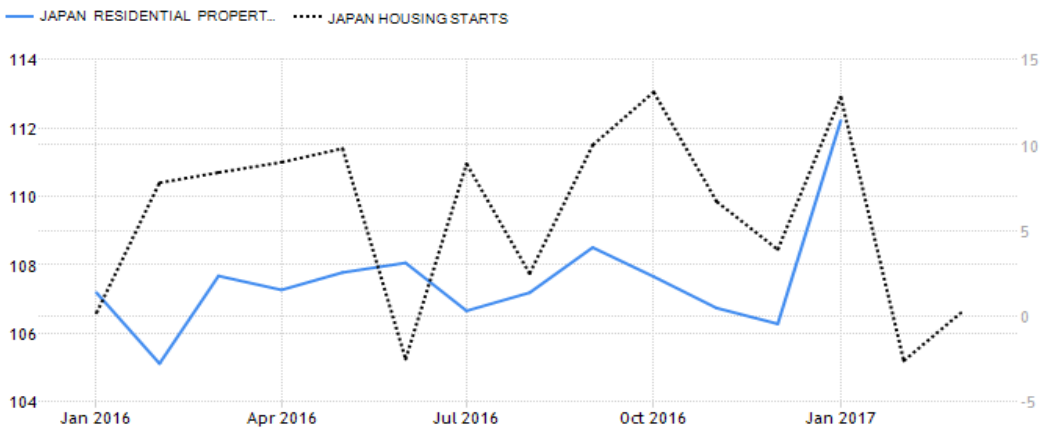
Source: www.tradingeconomics.com

5. *New Supply*

The figure below illustrates the movement of Japan's housing starts and residential property index. Japan's housing index includes the prices of land, detached houses and condominiums while Japan's housing starts refers to the annual change in the volume of new housing construction started. Housing starts fell significantly around June 2016 and Japan's residential property market escalated in January 2017.

According to Trading Economics, housing starts in Japan unexpectedly increased by 0.2 percent from the previous year in March 2017. The rise was mainly supported by a faster growth in the dwelling of rented houses and households built for sale purposes. Japan's housing index reached an all-time high in January 2017 to 112.22 index points, as it increased by 5.94 index points from December 2016 (Trading Economics). According to Global Property Guide (2017), Japan's property market remains upbeat and despite stagnant economic growth housing prices continue to rise sturdily. Japan's property demand is largely growing and residential construction activity is rising (Global Property Guide, 2017).

Figure 11: Japan Housing Starts and Residential Property Index.



Source: www.tradingeconomics.com

With close to negative interest rates in Japan, there has been a disturbing amount of speculative activity within the property market. The recent bulge in investment activity within the real-estate market, leading to over-inflated domestic property prices, stimulates the development of a housing market bubble. If this asset bubble was to burst and prices began to deflate, it would have severe impacts on the real economy with spill-overs to other sectors that are interdependent on the housing market. According to a Bloomberg article (2017), the Deutsche Bank's Otani said that both 2016 and 2017 will be crucial years for Tokyo's property market because the silent property bubble will suddenly start to collapse; he predicts property prices to fall by 20% to 30% at the end of 2018 (Bloomberg, 2016). Whether this will result in a replication of the GFC is unknown at best; however it most certainly will have a domino effect throughout an economy experiencing the burst of the property bubble, and will subsequently affect different countries around the world if the bubble bursts in a major developed country. To clarify, exogenous triggers may have sparked the creation an asset bubble within the Japanese housing sector however, the unconventional monetary policy introduced by the BOJ further fabricated its development.

7. Recommendations and Conclusion

In going forward, I recommend the following for all policy makers:

- Unconventional policies should not rely holistically on the participation from banks in determining their effectiveness, as this may undermine the central bank's perceived legitimacy and autonomy.
- Further understanding of the different long-term consequences and international spill-overs of unconventional monetary policies, so as to minimise its unintended effects. Similarly, extensive country-specific research should be done on the long-term effectiveness of such policies.
- Distinguish between the role of government and that of central banks within the unconventional policy framework. Large purchases of government bonds may be easily criticised as a means for financing government.
- Development of a broader range of exit strategies which minimise the risks of withdrawal.
- During periods of uncertainty, people turn to the speculative market to seek alternative investment opportunities. Going forward, it should be critical for banks ensure that borrowers are fully aware of the risks surrounding the speculative market.

In conclusion, the effectiveness of unconventional monetary policies depend on many factors including the structure and transparency of the financial systems, overall economic conditions that prevail, the willingness of the public and banks to play their part, and the risks involved in the exit strategy. The Fed, ECB, BOE and BOJ all face different economic and political conditions and therefore what works well for one country, may not work well for another. Furthermore, central banks implement a variety of unconventional measures in different dosages, some of which may involve more risk than others. In essence, unconventional monetary policies should remain unconventional and only be implemented under severe economic conditions so that future crises may be mitigated or even avoided.

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